

Award-winning: How a company from Halberstadt uses ceramic water filters to remove even bacteria

Since the middle of the year, the successful Halberstadt-based company Nanostone Water has been operating under the name Acuriant. The multi-award-winning company manufactures water filters in Saxony-Anhalt that can even purify liquids of bacteria, pesticides, and drug residues. Industrial customers around the world rely on this innovative ceramic product.

A ruby and a sapphire. These two gemstones are displayed in a glass case right at the entrance to the Acuriant company. Anyone familiar with the chemical composition of these gemstones knows which substance plays an important role at the company in the industrial park in Halberstadt. It is aluminum oxide. This is a white, odorless powder and the basic ingredient of a special product. It is manufactured in the Vorharz region and sold all over the world from here.

But let's start at the beginning. Managing Director Dr. Christian Goebbert can tell the whole story. He is the last of five remaining founders who set out in 2001 to turn an idea into an innovative company. Like many other success stories, this one also began in a garage. It was located in Saarland, near the University of Saarbrücken. And the idea, in a nutshell, was to make a special filter out of ceramic.

Even the ancient Romans filtered with ceramics

Basically, filtering liquids using ceramics is nothing new. Even the ancient Romans used terracotta to clean their water of impurities. But the five scientists wanted to do even better. The goal was to create a special membrane that not only filters dirt and suspended solids from the water, but also bacteria, drug residues, microplastics, and pesticides. This requires extremely small pores. "The pores in our coating are 30 nanometers in size," says Dr. Goebbert.

These openings are, of course, no longer visible to the human eye. An electronic microscope is required to see them. To illustrate the tiny size of the pores, Dr. Goebbert likes to use a vivid comparison. "A nanometer is to a meter as a soccer ball is to the globe." Up to 7,000 of these fine-pored filters are now manufactured each year in the Halberstadt production hall. They consist of flat plates through which the water is pressed. Each plate has a filter area of more than 24 square meters.

From 20 to 130 employees

It is no coincidence that the company settled on a greenfield site just outside Halberstadt. "We received a subsidy of around 50 percent," says Dr. Goebbert. The Halberstadt facilities were built in 2003. At that time, the company had around 20 employees; today, it has around 130. However, the company was not successful from the outset. After filing for bankruptcy, an investor from the US got involved in the business and has been supporting the company ever since. It is now on a growth trajectory.

In addition to the development and quality control rooms, Halberstadt is also home to the entire production facility. The hall is warm, there is a humming noise, and employees walk slowly between the machines, which tower up to the ceiling. They control and monitor the many steps required to turn the aluminum oxide, the white powder, into a ceramic filter.

Products with a 20-year warranty

The mixture is kneaded, then pressed through a mold, dried, and later fired. Some of this process is automated, but some is still done by hand. "We are no longer entirely a manufacturer," says Dr. Goebbert. He pulls open a drawer and points to the latest development from Acuriant. It is a mold that is even more delicate, thus providing even more surface area within a filter. After the ceramic plates have been fired, employees check the quality and assemble them into a finished filter system.

Next to the factory hall is something resembling a craft room. This is where the Halberstadt-based company tinkers with new ideas and where a machine simulates 20 years of filter use. That's how long the company guarantees its products. Managing Director Goebbert points to the vacant lot next to the workshop. The company purchased this additional 8,000 square meters of land in early 2024. Now there are plans to build on it and thus double production capacity.

Text and photos: Björn Menzel

More information:

<https://acuriant.com/>

Additional assets available online: [Photos \(2\)](#) [Video \(1\)](#)

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